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DATE September 30, 1997

RE Evaluation of Petro-Chem SC status under the RCRIS Corrective Action  
Environmental Indicator Event Codes (CA725 and CA750)  
EPA ID Number SCD 044 442 333

## I. PURPOSE OF MEMO

This memo is written to formalize an evaluation of Petro-Chem SC's status in relation to the following RCRIS corrective action codes

- 1) Human Exposures Controlled Determination (CA725)
- 2) Groundwater Releases Controlled Determination (CA750)

The applicability of these event codes adheres to the definitions and guidance provided by the Office of Solid Waste (OSW) in the July 29, 1994, memorandum to the Regional Waste Management Division Directors

## II. HUMAN EXPOSURES CONTROLLED DETERMINATION (CA725)

There are three (3) national status codes under CA725 These status codes are

- 1) YE Yes, applicable as of this date
- 2) NA Previous determination no longer applicable as of this date

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3) NC No control measures necessary

Region 4 has also added a regional status code to CA725 which tracks initial evaluations in which a determination is made that plausible human exposures to current contamination risks are not controlled. This regional status code is listed as "NO, not applicable as of this date." Use of the regional status code is only applicable during the first CA725 evaluation. Evaluations subsequent to the first evaluation will use the national status codes (i.e., YE, NA and NC) to explain the current status of exposure controls.

Note that the three national status codes for CA725 are based on the entire facility (i.e., the codes are not SWMU specific). Therefore, every area at the facility must meet the definition before a YE, NA or NC status code can be entered for CA725. Similarly, the regional status code NO, is applicable if plausible human exposures are not controlled in any areas of the facility.

This particular CA725 evaluation is the first evaluation performed for Petro-Chem SC. Because assumptions have to be made as to whether or not human exposures to current media contamination are plausible and, if plausible, whether or not controls are in place to address these plausible exposures, this memo first examines each environmental media (i.e., soil, groundwater, surface water, air) at the entire facility including any offsite contamination emanating from the facility rather than from individual areas or releases. After this independent media by media examination is presented, a final recommendation is offered as to the proper CA725 status code for Petro-Chem SC.

The following discussions, interpretations and conclusions on contamination and exposures at the facility are based on the following reference documents:

- 1) Supporting Information Relevant to Interim Corrective Measures dated June 1994
- 2) RCRA RFI Workplan, dated August 1994 (revised July 1995 and August 1996)
- 3) Site Subsurface Characterization Investigation at the ThermalKEM Facility, dated December 1993
- 4) Temporary Well Investigation, dated December 3, 1996
- 5) RCRA - HSWA Permit Application, dated May 1996

### **III. MEDIA BY MEDIA DISCUSSION OF CONTAMINATION AND THE STATUS OF PLAUSIBLE HUMAN EXPOSURES**

**Groundwater** - Releases from SWMUs and/or AOCs have contaminated groundwater at concentrations above background and Region III Risk Based Concentration (RBC) action levels across the site. The highest concentrations of groundwater contamination are found in the central portion of the facility near Old Solvent Recovery Containment Ditch, Fuel Oil Area and Burn Pits (SWMU 41). The uppermost aquifer consists of saprolite and fractured bedrock. Generally, the more shallow portion of the aquifer has greater concentrations of contaminants than the lower bedrock aquifer due to the free product in the Fuel Oil Release area. The main constituents of concern across the site include volatile organics and metals.

Interim measures have been implemented to control migration of contaminated groundwater. Three extraction wells have been installed with two currently pumping. An interceptor trench has been installed in the fuel oil release area to remove free product.

The RFI Workplan was conditionally approved in June 1996. One phase of investigation has been

completed Temporary groundwater wells were installed across the site to determine appropriate locations for permanent monitoring wells The final remedy for site-wide groundwater remediation has not yet been determined

**Surface water** - Surface water samples have been collected from Wildcat Creek over time with low levels of contamination intermittently detected at both upstream and downstream locations An expanded surface water and sediment sampling program will be conducted in Wildcat Creek during the RCRA Facility Investigation The potential for human exposure from surface water contamination is undetermined at this time

**Soil** - Soil at the facility is contaminated with volatile organics and metals Soil in the area of the Fuel Oil Release is contaminated with No 2 fuel oil and free phase product is reported to have been as thick as 9.5 ft However, the contaminated soils are onsite and facility access is restricted by means of a fence and gates

**Air** - Contamination from air emissions is undetermined Air may have been contaminated from emissions in the Fuel Oil Release area, and, although interim actions have been taken in the area to collect free product, at times of heavy rains, the fuel oil seeps out of the ground A follow-up letter will be sent to the facility to address this potential exposure pathway

#### **IV. STATUS CODE RECOMMENDATION FOR CA725:**

The facility has implemented interim action with regard to groundwater contamination by installing groundwater extraction wells Extraction wells EW-2 and EW-3 are currently pumping The facility has access restricted with fencing and gates Contamination from air emissions is undetermined Interim measures were implemented in the Fuel Oil Release area with the installation of a Fuel Oil Interceptor Trench Exposure by means of surface water contamination has not been determined Because not all media are known to be controlled, it is recommended that CA725 NO be entered into RCRIS

#### **V. GROUNDWATER RELEASES CONTROLLED DETERMINATION (CA750)**

There are three (3) status codes listed under CA725

- 1) YE Yes, applicable as of this date
- 2) NA Previous determination no longer applicable as of this date
- 3) NR No releases to groundwater

Region 4 has also added an additional status code which tracks the initial evaluations in which a determination is made that groundwater releases are not controlled This regional status code is listed as "NO, not applicable as of this date " Use of the regional status code is only applicable in the first CA750 evaluation Evaluations subsequent to the first evaluation will use the national status codes (i.e., YE, NA and NR) to explain the current status of groundwater control

Note that the three national status codes for CA750 are designed to measure the adequacy of actively or passively controlling the physical movement of groundwater contaminated with hazardous constituents above relevant action levels The point where the success or failure of controlling the migration of hazardous constituents is measured is termed the designated boundary (e.g., the facility boundary, a line up gradient of receptors, the leading edge of the plume as defined by levels above action levels or cleanup standards, etc.) Therefore, every contaminated area at the facility must meet the definition

before these event/status codes can be entered. Similarly, the regional status code is applicable if contaminated groundwater is not controlled in any area(s) of the facility.

This evaluation for CA750 is the first formal evaluation performed for Petro-Chem SC. Please note that CA750 is based on the adequate control of all contaminated groundwater at the facility. The following discussions, interpretations and conclusions on contaminated groundwater at the facility are based on the following reference documents:

- 1) Supporting Information Relevant to Interim Corrective Measures, dated June 1994
- 2) RCRA RFI Workplan, dated August 1994 (revised July 1995 and August 1996)
- 3) Site Subsurface Characterization Investigation at the ThermalKEM Facility, dated December 1993
- 4) Temporary Well Investigation, dated December 3, 1996

#### **VI. STATUS CODE RECOMMENDATION FOR CA750.**

Releases from SWMUs and/or AOCs have contaminated groundwater at concentrations above background and Region III Risk Based Concentration (RBC) action levels across the site. The highest concentrations of groundwater contamination are found in the central portion of the facility near Old Solvent Recovery Containment Ditch, Fuel Oil Area and Burn Pits (SWMU 41). The uppermost aquifer consists of saprolite and fractured bedrock. Generally, the more shallow portion of the aquifer has greater concentrations of contaminants than the lower bedrock aquifer due to the free product in the Fuel Oil Release area. The main constituents of concern across the site include volatile organics and metals.

Interim measures have been implemented to control migration of contaminated groundwater. Three extraction wells have been installed with two currently pumping. An interceptor trench has been installed in the fuel oil release area to remove free product.

The RFI Workplan was conditionally approved in June 1996. One phase of investigation has been completed. Temporary groundwater wells were installed across the site to determine appropriate locations for permanent monitoring wells.

The final remedy for groundwater remediation has not been determined. The RFI will include an investigation of soils, groundwater and surface waters.

Based on the above discussion, it is recommended that CA750 YE be entered into RCRIS.